

**4<sup>th</sup> meeting of the Expert Group on  
Adaptation to Climate Change**  
Istanbul, 3-4 September 2019



**Policy and governance needs in response to the  
Vaia windstorm damage in Northeastern Italy.  
A call for multi-actor collaboration**

Davide Pettenella, Mauro Masiero, Laura Secco  
TESAF Department - University of Padova (Italy)



## Contents

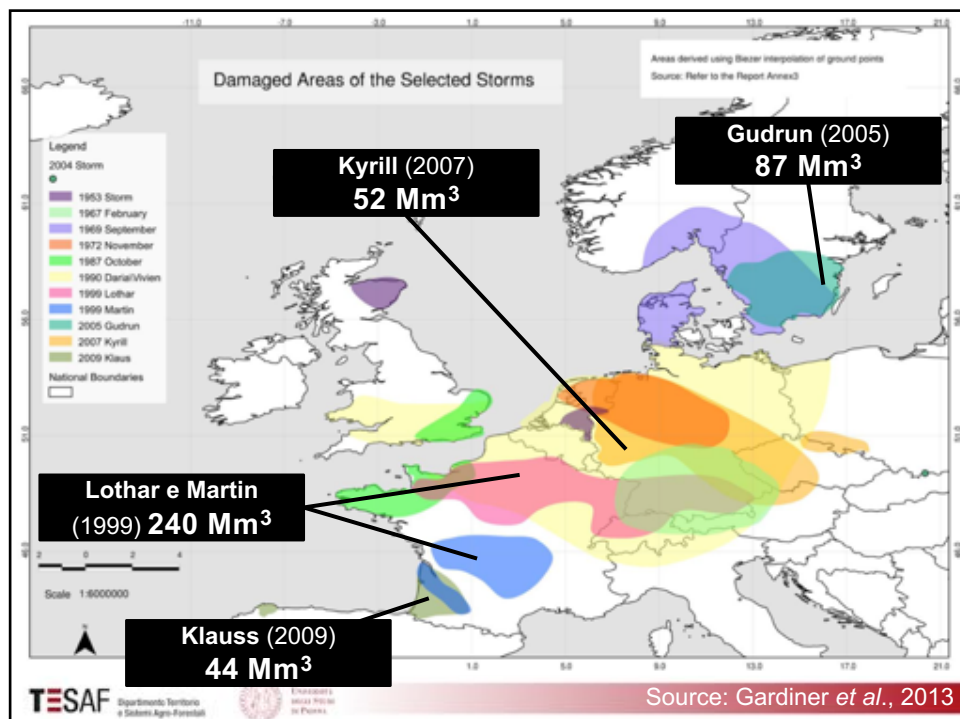
- The Vaia Storm: some data
- Policy and governance response:
  - The emergency phase
  - The post-emergency period
- Conclusions: lessons learnt

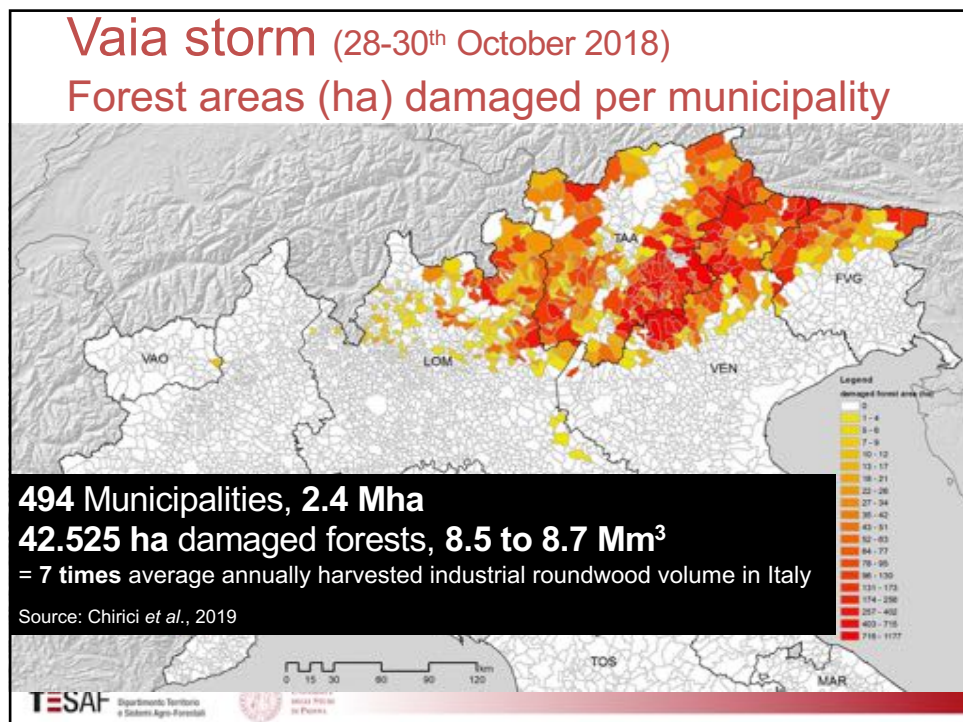
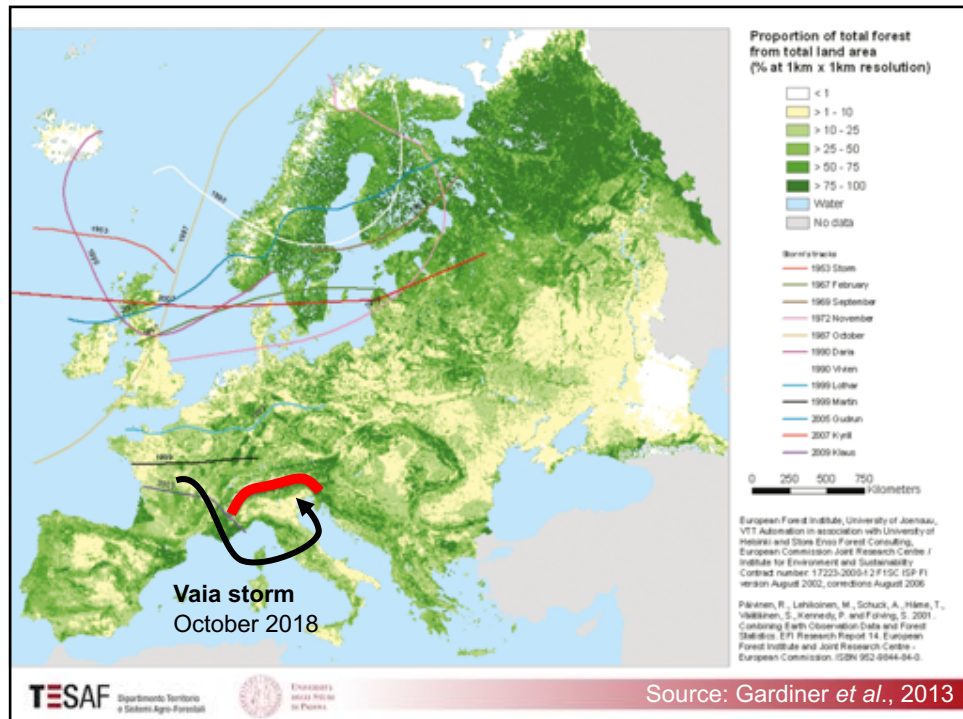
The slides can be downloaded from the web: search «pettenella»



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- **The Vaia Storm: some data**
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## A multifaceted event: main impacts and future increased risks

- Natural capital and biodiversity
- Infrastructures and hydrogeological risks
- Economic impacts
- Social aspects

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DELLA PALAZZA  
DI PAVIA

## Increased damages for the lack of protective functions by forests





## Impacted infrastructures



Adventure park  
Roana (VI)  
Credits: S. Cesca

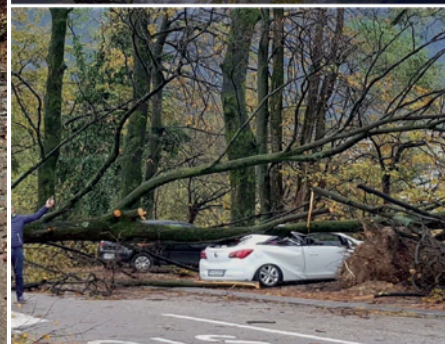
- Power/mobile lines
- Water facilities
- Roads and forest roads
- Hiking and bike paths
- Defensive infrastructures



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Source: "Veneto in ginocchio" – Veneto Region, 2018

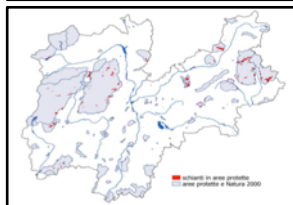
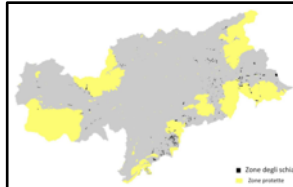
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## Damaged forests in protected areas

About **809 ha** in natural and national parks  
(incl. Natura 2000 sites) (Aut. Prov. BZ, 2019)



About **10.200 ha** in natural and national parks  
(incl. Natura 2000 sites) (Aut. Prov. TN, 2019)

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About **5.000 ha** in 27  
Natura 2000 sites  
(Sitzia, 2019)



## Changed landscapes Dolomites UNESCO area Ecological, social and economic implications

Credits: G. Corradini



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## Relevant impacts on tourism

### Dolomites High Routes

Experience the Dolomites mountains on fascinating long distance alpine tours



The Alte Vie delle Dolomiti, the Dolomites High Routes, are long distance alpine tours for those who want to experience even more closely the real charm of the mountain.

The daily stages wind across the Dolomites mountains, from east to west or from north to south. You will trek constantly at high altitude, from one valley to another, enjoying the super view down to the valleys.

A backpack with a few essential items, some clothes, the joy of trekking and physical fitness and you're ready for a fantastic adventure.

The 10 Dolomites High Routes have different characteristics and difficulty levels.

Credit: <http://www.dolomitipark.it>

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Ente di Promozione  
Turistica

TRENTINO

**MUOVITI  
CON ATTENZIONE**  
MENTRE IL BOSCO RINASCE  
RISPETTA LA SEGNALETICA

BITTE BEACHTEN SIE | MOVE CAREFULLY  
WÄHREND DER WALD WIEDER-  
ANFANGT WIRD BEACHTET | FOLLOW THE SIGNPOST  
DIE BITTE BE AUFMERKSAMKEIT

**SENTIERI INAGIBILI**  
GESPERRE WEGE | CLOSED PATHS

**SENTIERI INAGIBILI**  
GESPERRE WEGE | CLOSED PATHS

340	340	341	414	511
616	616	624	639	639

Notifiche 2018 a Trentino è stato colpito da un forte maltempo che ha causato frangenti temporali di alcuni sentieri. Diez e i suoi sentieri di base vengono di base ripristinati.

In Oktober 2018 wurde das Trentino von schweren Wetterbedingungen betroffen. Starkes Wetter mit Regenschauern und Schneefällen verursachte Lawen, welche die Wege gefährdeten. Die Wege werden von den Basisstationen wiederhergestellt.

In October 2018 Trentino was hit by extreme weather conditions that damaged some of our beautiful paths, and consequently these had to be temporarily closed down. We are now working to restore the paths.

**Info aggiornate e itinerari percorribili**  
Aktuelle Infos und mögliche Routen | All updates and possible routes

[www.visitrentino.info/mca](http://www.visitrentino.info/mca)

Adesso per il Turismo Val di Fiemme  
Turismo Val di Fiemme  
Tel. +39 0462 609 500

PROVINCIA AUTONOMA DI TRENTO | Dolomiti / Dolomiten / Dolomites N. 78  
14 aprile/April 2018

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Ente di Promozione  
Turistica

## Policy and governance response

### A “black and white” picture

- Emergency phase: a **quick reaction by institutional and voluntary bodies** (safety, basic services and infrastructures)
  - No casualties from floods (1 driver killed by a tree fell down in urban area), all communication infrastructures restored in few days

## Policy and governance response

### A “black and white” picture

- Emergency phase: a **quick reaction by institutional and voluntary bodies** (safety, basic services and infrastructures)
- **Post-emergency issues:**
  - **Quick and (quite) significant reaction by:**
    - Media
    - Civil society organizations
    - Education institutions (Schools and Universities)
    - Companies



## Never Italian media gave such a coverage to a forest event

- TV special reports
- Videos
- Interviews
- Conferences
- ...

also after many months from the event

**la Repubblica**

Approfondimento **Ambiente**

### L'ultima sfida di mister Dinamite: "Ripulirò i boschi devastati da Vaia"

28 AGOSTO 2019

Via le ceppaie di pini, abeti e larici crollati. Si parte da Asiago, tra le zone più colpite dalla bufera di fine ottobre. Il piano di Coppe, che ha demolito il ponte Morandi: "Faremo in due anni quel che la natura farebbe in cento"

DAL NOSTRO INVIATO GIAMPAOLO VISETTI

## More visibility for the forestry sector

A TV series on 4 highly-specialized forest-enterprises working in forest areas damaged by Vaia storm

Undercut è su Dplay Plus in anteprima e senza pubblicità | [Guarda Ora](#) X

**dplay** Programmi Serie TV Canali Generi Live Accedi Scopri Plus Cerca generi, programmi...


**Undercut: l'oro di legno**

**PHASE 1**

Seguiamo quattro team di boscaioli impegnati nel difficile compito di recuperare più legna possibile nelle foreste del T...

<https://it.dplay.com/dmax/undercut-loro-di-legno/>

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## Disaster tourism

Promoturismo FVG a Boster nord est con 3 escursioni nei boschi colpiti dalla tempesta Vaia

lunedì 12 agosto 2019



Quest'anno tutta la manifestazione Boster nord est avrà come filo conduttore i temi del "dopo Tempesta Vaia", sia all'interno dei convegni e workshop, sia durante le dimostrazioni che si svolgeranno ai cantieri forestali e durante le visite guidate organizzate in fiera.

Promoturismo FVG, come fu per la precedente edizione, parteciperà alla manifestazione proponendo, per le giornate di sabato e domenica, **3 escursioni attraverso i boschi dei Laghetti di Timau colpiti dalla tempesta Vaia**, per meglio comprendere cosa ha comportato e cosa potrebbe ancora comportare in futuro una simile calamità, soffermandosi sugli aspetti naturalistico-ambientali dei luoghi.

Nella giornata di sabato accompagnatore qualificato AIGAE FR 061 sarà **CLAUDIO BELTRAME** (Via Melar, 1/1, 33030 Canussio di Varmo - UD) - 0432770020 - 3334852227

c.beltrame62@gmail.com

Italians are realizing that we live in a forest-rich country and that forests are the most relevant green infrastructure of the country

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## International visibility and networking



### Coping with the aftermath of storm Vaia in North-East Italy

by Silvia Abruscato — February 15, 2019

2 Comments

by Silvia Abruscato, (Gherardo Chiari), Giorgio Matteucci, and Davide Pettenella

On October 27-30<sup>th</sup> 2018, the storm Vaia hit North-eastern Italy with peak winds of 200 km/h, which compares to a very strong hurricane, and very relevant rainfall. Vaia has not only been the largest single windstorm event in recorded history causing serious damages to the forests in Italy. The storm was also a singular event that has raised unprecedented public attention because it hit some of the most beautiful and most productive forests in Italy located in the Dolomites Mountains, where several UNESCO world heritage sites full of history, culture, and traditions are located. Finally, Vaia caused enormous economic losses: the spruce and fir dominated mountain forests in the

#### Welcome to Resilience Blog

The Resilience Blog is published by European Forest Institute's [Resilience Research Programme](#), which focuses on forest-related risks such as climate change and the role of forests and trees in urban areas.

We post both in English and German to address local and international readers.

Our articles make no claim to completeness and do not necessarily represent the opinion of EFI.



<https://resilience-blog.com/2019/02/15/coping-with-the-aftermath-of-storm-vaia-in-north-east-italy/>

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A very positive outcome among civil society organizations, the general public and local authorities: **cooperation**

Fundraising and philanthropic investments

Organisation	Web site	Type of intervention
beLeafing	<a href="https://beleafing.com">https://beleafing.com</a>	Planting (geolocalized trees)
Mosaico verde	<a href="https://www.mosaicoverde.it">https://www.mosaicoverde.it</a>	Planting in protected areas and in other special sites
treedom	<a href="https://www.treedom.net">https://www.treedom.net</a>	Planting (geolocalized trees) and Carbon accounting
tree-nation	<a href="https://tree-nation.com">https://tree-nation.com</a>	Planting (geolocalized trees), single tree "adoption" and Carbon accounting
WOWNature	<a href="https://www.wownature.eu">https://www.wownature.eu</a>	Forest reconstruction (not only planting) in selected forest sites
Trentino TreeAgreement	<a href="https://www.trentinotreeagreement.it/">https://www.trentinotreeagreement.it/</a>	Forest reconstruction (not only planting) and visitors' infrastructures in 3 selected forest sites
Filiera solidale PEFC	<a href="https://filerasolidalepefc.it/">https://filerasolidalepefc.it/</a>	Special PEFC label for the wood coming from the regions sold to Italian companies

## Cooperation PhD research activities

**Young scientists for Vaia research program**

4 thematic areas for PhD candidates applying in 2019

**LERH Land Environment Resources and Health PhD Program**

Priority research topics

Research area Agriculture, forest and food economics and policy

Under the Collaborative Doctoral Partnership (CDP) with the Joint Research Centre (JRC) of the European Commission ([see here](#) for more information) a special research topic is:

**Ecosystem services at regional scale in the EU bio-economies.**  
The updated EU bioeconomy strategy encompasses not only the primary production sectors and the industrial sectors that use biological resources and processes normally at large scale in capital- and labor-intensive industrial plants, but also the ecosystems and the cultural and regulating services they provide, with potential positive effects in the local economies, even if mainly in small scale activities connected to tourism, educational, cultural and sport activities. In this context, the assessment and valuing of forest ecosystem services and their role in the whole economy is essential. The overall aim of the PhD is to investigate over the contribution of forest ecosystems to the local and regional (bio-)economies, characterizing the type of beneficiaries such as e.g. industries or citizens in rural areas or cities.

**"Young scientists for Vaia" research program: 4 topics on the dynamic, impacts and management options related to the Vaia storm**

- \* The Vaia storm: risk perception, TEV of the damages and attitudes versus mitigation programs (D.Pettenella, M.Thiene, T.Tempesta, P.Gatto, L.Secco, D.Vecchiato, M.Masiero)
- \* Post-windthrow short-term regeneration dynamics: monitoring the effect of deadwood manipulation (T.Antodillo, M.Carrer, E.Lingua, G.Pelli)
- \* Wood transportation and logistics in complex scenarios and the role of primary and secondary road network. The case of Vaia storm in the Northeast of Italy (R.Cavalli, S.Grigolato, F.Protti)
- \* The Vaia flood event: observations and prediction of sediment and large wood dynamics (M.Lenzi, M.Borgia, V.D'Agostino, P.Taroli, L.Pioco, C.Gregoret)

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[www.tesaf.unipd.it/en/research/doctoral-degrees-phd-lerh-program](http://www.tesaf.unipd.it/en/research/doctoral-degrees-phd-lerh-program)

## Policy and governance response

### A “black and white” picture

- Emergency phase: a **quick reaction by institutional and voluntary bodies** (safety, basic services and infrastructures)
- **Post-emergency issues:**
  - **Quick and (quite) significant** reaction by:
    - Civil society organizations
    - Education institutions (Schools and Universities)
    - Private sector organizations
    - Mayors and institutions at municipal level
  - **Inadequate reaction** by regional/provincial/State administration bodies

### Inadequate reaction by regional/provincial/State administration bodies

No coordinated policy (← Italian decentralized system):

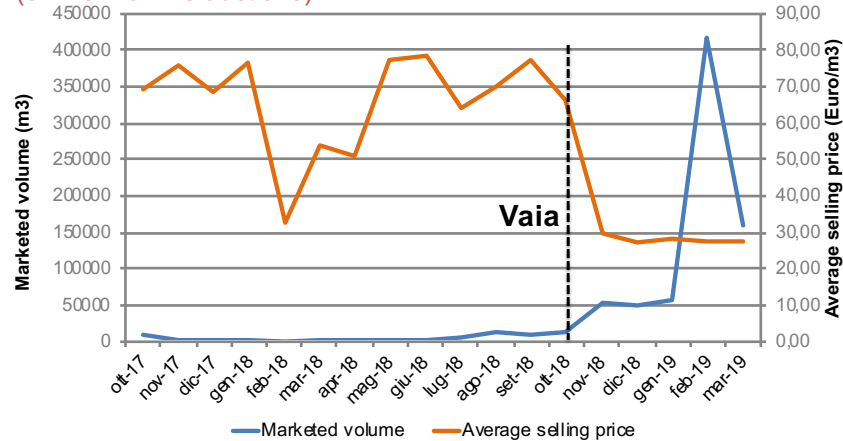
- for **recruiting** harvesting companies
- for **financially supporting** and **training** the forest operators (7 deceased workers in harvesting operations)
- for organizing the **sales and promoting wood** consumption
- for **log storage**

Only the **inventory** of the forest damages (physical quantities, **not the economic damages**) and the **simplification of legislation** has been carried out in a coordinated way



## The immediate impact: the collapse of wood prices

Standing trees - Autonomous Province of Trento  
(online + offline auctions)



Source: own elaborations from Legno Trentino web portal & Autonomous Province of TN data

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Domestic market got  
saturated: export towards  
traditional (Austria) and new  
(China) trade partners



Source: Il Corriere delle Alpi – 11<sup>th</sup> May 2019

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di Trento

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## Conclusions: lessons learned

- A new perception by the general public of the importance of an **active forest management policy** (more resilient forests, wood mobilization)  
... also because extreme events likely to become more intense and frequent
- The complete **decentralized forest governance system** is not able to cope with such extraordinary events: “(...) *a rapid response to such disorganizing, catastrophic, psychologically shocking events rarely produces good results unless there is already a deep understanding of forest ecology [...] and governance firmly embedded in management rules and culture*” (Vallauri, 2005; p. 342) → need for interregional and European cooperation
  - **Learning, educating and supporting each-other** across Europe and globally
  - Rethinking and reorganizing **governance structures** to fill the gaps and make them more effective

